

# Work Order ID 97577

February-21-13 2:41:09 PM

**\*97577\***

Page 1

Item ID: D3638-1 Accept **\*N900040100\*** Setup Start **\*NS1\***  
 Revision ID: Stop **\*NS2\***  
 Item Name: Bushing - Clarify w/customer Rev. A or Rev. B  
 Start Date: 2/20/13 Start Qty: 20.00 **\*20\*** Cust Item ID:  
 Required Date: 3/08/13 Req'd Qty: 20.00 **\*20\*** Customer:  
 Reference:

Approvals: Process Plan: MLJ Date: 13-02-25 Tooling: Date: Run Start **\*NR1\***  
 QC: Date: SPC (Y/N): Date: Stop **\*NR2\***

| Sequence ID/<br>Work Center ID | Operation<br>Description                    | Set Up/<br>Run Hours | Tool ID | Tool # | Plan<br>Code | Accept<br>Qty | Reject<br>Qty | Reject<br>Number | Insp.<br>Stamp |
|--------------------------------|---|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
| <b>Draw Nbr</b>                | <b>Revision Nbr</b>                         |                      |         |        |              |               |               |                  |                |
| D3638                          | Rev B                                       |                      |         |        |              |               |               |                  |                |
| 100                            |   | 0.00                 |         |        |              |               |               |                  |                |
| <b>*100*</b>                   | Hardinge CNC LATHE SMALL                    |                      |         |        |              |               |               |                  |                |
| Hardinge                       | Memo  | 0.00                 |         |        |              |               |               |                  |                |
| Hardinge CNC Lathe Small       | Machine as per folio FA704Deburr and tumble |                      |         |        |              |               |               |                  |                |
| 110                            |   | 0.00                 |         |        |              |               |               |                  |                |
| <b>*110*</b>                   | QC2- Inspect parts off machine FAI/FAIB     |                      |         |        |              |               |               |                  |                |
| QC                             | Memo  | 0.00                 |         |        |              |               |               |                  |                |
| Quality Control                |   |                      |         |        |              |               |               |                  |                |
| 120                            |   | 0.00                 |         |        |              |               |               |                  |                |
| <b>*120*</b>                   | QC8- Inspect parts - second check           |                      |         |        |              |               |               |                  |                |
| QC                             | Memo  | 0.00                 |         |        |              |               |               |                  |                |
| Quality Control                |   |                      |         |        |              |               |               |                  |                |

PO 13/03/09 20 0  
 PO 13/03/09 20 0  
 13.3.11 20 +  
 DAS 04 9-09

NCR: Yes / No

**WORK ORDER NON-CONFORMANCE / UPDATE**

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

|  |                                    |  |                                      |   |                   |  |             |              |              |  |  |                                    |                                    |                                    |                                      |                                    |                                    |  |                                  |  |                                    |  |                                |                                    |                                    |                                   |  |
|--|------------------------------------|--|--------------------------------------|---|-------------------|--|-------------|--------------|--------------|--|--|------------------------------------|------------------------------------|------------------------------------|--------------------------------------|------------------------------------|------------------------------------|--|----------------------------------|--|------------------------------------|--|--------------------------------|------------------------------------|------------------------------------|-----------------------------------|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____ |                                    |  |                                      | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Work Order Update <input type="checkbox"/> |                   | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><table style="width:100%; border: none;"> <tr> <td style="width:25%;">Skid-tube <input type="checkbox"/></td> <td style="width:25%;">Crosstube <input type="checkbox"/></td> <td style="width:25%;">Water Jet <input type="checkbox"/></td> <td style="width:25%;">Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table> |             |              |              |  |  | Skid-tube <input type="checkbox"/> | Crosstube <input type="checkbox"/> | Water Jet <input type="checkbox"/> | Engineering <input type="checkbox"/> | Machining <input type="checkbox"/> | Small Fab <input type="checkbox"/> | Prod. Eng. Coord. <input type="checkbox"/> | Quality <input type="checkbox"/> | Thermoforming <input type="checkbox"/> | Finishing <input type="checkbox"/> | Rec/Store/Packaging <input type="checkbox"/> | Other <input type="checkbox"/> | Large Fab <input type="checkbox"/> | Composite <input type="checkbox"/> | Supplier <input type="checkbox"/> |  |
| Skid-tube <input type="checkbox"/>                           | Crosstube <input type="checkbox"/> | Water Jet <input type="checkbox"/>           | Engineering <input type="checkbox"/> |   |                   |  |             |              |              |  |  |                                    |                                    |                                    |                                      |                                    |                                    |  |                                  |  |                                    |  |                                |                                    |                                    |                                   |  |
| Machining <input type="checkbox"/>                           | Small Fab <input type="checkbox"/> | Prod. Eng. Coord. <input type="checkbox"/>   | Quality <input type="checkbox"/>     |   |                   |  |             |              |              |  |  |                                    |                                    |                                    |                                      |                                    |                                    |  |                                  |  |                                    |  |                                |                                    |                                    |                                   |  |
| Thermoforming <input type="checkbox"/>                       | Finishing <input type="checkbox"/> | Rec/Store/Packaging <input type="checkbox"/> | Other <input type="checkbox"/>       |   |                   |  |             |              |              |  |  |                                    |                                    |                                    |                                      |                                    |                                    |  |                                  |  |                                    |  |                                |                                    |                                    |                                   |  |
| Large Fab <input type="checkbox"/>                           | Composite <input type="checkbox"/> | Supplier <input type="checkbox"/>            |                                      |   |                   |  |             |              |              |  |  |                                    |                                    |                                    |                                      |                                    |                                    |  |                                  |  |                                    |  |                                |                                    |                                    |                                   |  |
| <b>Root Cause</b>  | Date                               | Step   | Qty                                  | Description of work order update or Non-conformance   | Initial Chief Eng | Action Description   | Sign & Date | Verification | QC Inspector |  |  |                                    |                                    |                                    |                                      |                                    |                                    |  |                                  |  |                                    |  |                                |                                    |                                    |                                   |  |
| Doc/Data <input type="checkbox"/>                            |                                    |  |                                      |   |                   |  |             |              |              |  |  |                                    |                                    |                                    |                                      |                                    |                                    |  |                                  |  |                                    |  |                                |                                    |                                    |                                   |  |
| Equip/Tooling <input type="checkbox"/>                       |                                    |  |                                      |   |                   |  |             |              |              |  |  |                                    |                                    |                                    |                                      |                                    |                                    |  |                                  |  |                                    |  |                                |                                    |                                    |                                   |  |
| Operator <input type="checkbox"/>                            |                                    |  |                                      |   |                   |  |             |              |              |  |  |                                    |                                    |                                    |                                      |                                    |                                    |  |                                  |  |                                    |  |                                |                                    |                                    |                                   |  |
| Material <input type="checkbox"/>                            |                                    |  |                                      |   |                   |  |             |              |              |  |  |                                    |                                    |                                    |                                      |                                    |                                    |  |                                  |  |                                    |  |                                |                                    |                                    |                                   |  |
| Setup <input type="checkbox"/>                               |                                    |  |                                      |   |                   |  |             |              |              |  |  |                                    |                                    |                                    |                                      |                                    |                                    |  |                                  |  |                                    |  |                                |                                    |                                    |                                   |  |
| Other <input type="checkbox"/>                               |                                    |  |                                      |   |                   |  |             |              |              |  |  |                                    |                                    |                                    |                                      |                                    |                                    |  |                                  |  |                                    |  |                                |                                    |                                    |                                   |  |
| Process <input type="checkbox"/>                             |                                    |  |                                      |   |                   |  |             |              |              |  |  |                                    |                                    |                                    |                                      |                                    |                                    |  |                                  |  |                                    |  |                                |                                    |                                    |                                   |  |
| Supplier <input type="checkbox"/>                            |                                    |  |                                      |   |                   |  |             |              |              |  |  |                                    |                                    |                                    |                                      |                                    |                                    |  |                                  |  |                                    |  |                                |                                    |                                    |                                   |  |
| Training <input type="checkbox"/>                            |                                    |  |                                      |   |                   |  |             |              |              |  |  |                                    |                                    |                                    |                                      |                                    |                                    |  |                                  |  |                                    |  |                                |                                    |                                    |                                   |  |
| Unapproved <input type="checkbox"/>                          |                                    |  |                                      |   |                   |  |             |              |              |  |  |                                    |                                    |                                    |                                      |                                    |                                    |  |                                  |  |                                    |  |                                |                                    |                                    |                                   |  |

| FAULT CATEGORY  |   |   |   |  |
|---|---|---|---|--|
| <b>Landing Gear</b><br><input type="checkbox"/> Bending<br><input type="checkbox"/> Centre Not Concentric to O/S<br><input type="checkbox"/> Cracks<br><input type="checkbox"/> Crushed/Crimped<br><input type="checkbox"/> Cuffs<br><input type="checkbox"/> Heat Treat<br><input type="checkbox"/> Inspection Strip in Tube<br><input type="checkbox"/> Ripples in Bend<br><input type="checkbox"/> Torque Waves in Extrusion<br><input type="checkbox"/> Turning Sequence<br><input type="checkbox"/> Wave/Twist in Tube | <b>General</b><br><input type="checkbox"/> Bend<br><input type="checkbox"/> BOM/Route<br><input type="checkbox"/> Broken/Damaged<br><input type="checkbox"/> Burrs<br><input type="checkbox"/> Contamination<br><input type="checkbox"/> Countersink<br><input type="checkbox"/> Cut Too Short<br><input type="checkbox"/> Drill Holes<br><input type="checkbox"/> Drawing<br><input type="checkbox"/> Finish<br><input type="checkbox"/> Folio | <input type="checkbox"/> Grain<br><input type="checkbox"/> Hardware<br><input type="checkbox"/> Inspection Incomplete<br><input type="checkbox"/> Instructions Incomplete/Unclear<br><input type="checkbox"/> Maintenance<br><input type="checkbox"/> Mislabeled<br><input type="checkbox"/> Misread<br><input type="checkbox"/> Offset<br><input type="checkbox"/> Out of Calibration<br><input type="checkbox"/> Out of Sequence<br><input type="checkbox"/> Outside Dimensions | <input type="checkbox"/> Ovalized<br><input type="checkbox"/> Over/Under tolerance<br><input type="checkbox"/> Part Incorrect<br><input type="checkbox"/> Part Lost/Missing<br><input type="checkbox"/> Part Moved<br><input type="checkbox"/> Positioned Wrong<br><input type="checkbox"/> Power Loss/Surge<br><br><input type="checkbox"/> Pressure/Forced<br><input type="checkbox"/> Temperature/Cure<br><input type="checkbox"/> Weld<br><input type="checkbox"/> Wrong Stock Pulled<br><br><input type="checkbox"/> Other |  |

# Work Order ID 97577

February-21-13 2:41:09 PM

**\*97577\***

Page 2

Item ID: D3638-1

Accept

**\*N900040100\***

Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Bushing - Clarify w/customer Rev. A or Rev. B

Start Date: 2/20/13

Start Qty: 20.00

**\*20\***

Cust Item ID:

Required Date: 3/08/13

Req'd Qty: 20.00

**\*20\***

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start **\*NR1\***

Stop **\*NR2\***

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

130

Identify as per dwg & Stock Location **ST2480**

0.00

**\*130\***

Packaging

Memo

0.00

Packaging

**26x**

**13-3-12**

140

QC21- Final Inspection - Work Order Release

0.00

**\*140\***

QC

Memo

0.00

Quality Control

**13/3/12**

**13-03-12**

NCR: Yes / No

**WORK ORDER NON-CONFORMANCE / UPDATE**

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____ |      |      |     | <b>DISPOSITION</b><br><br><div style="display: flex; justify-content: space-around;"> <div> Rework <input type="checkbox"/><br/> Scrap <input type="checkbox"/><br/> Use-as-is <input type="checkbox"/><br/> Work Order Update <input type="checkbox"/> </div> <div> Skid-tube <input type="checkbox"/><br/> Machining <input type="checkbox"/><br/> Thermoforming <input type="checkbox"/><br/> Large Fab <input type="checkbox"/> </div> <div> Crosstube <input type="checkbox"/><br/> Small Fab <input type="checkbox"/><br/> Finishing <input type="checkbox"/><br/> Composite <input type="checkbox"/> </div> <div> Water Jet <input type="checkbox"/><br/> Prod. Eng. Coord. <input type="checkbox"/><br/> Rec/Store/Packaging <input type="checkbox"/><br/> Supplier <input type="checkbox"/> </div> <div> Engineering <input type="checkbox"/><br/> Quality <input type="checkbox"/><br/> Other <input type="checkbox"/> </div> </div> |                   | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-around;"> <div> Skid-tube <input type="checkbox"/><br/> Machining <input type="checkbox"/><br/> Thermoforming <input type="checkbox"/><br/> Large Fab <input type="checkbox"/> </div> <div> Crosstube <input type="checkbox"/><br/> Small Fab <input type="checkbox"/><br/> Finishing <input type="checkbox"/><br/> Composite <input type="checkbox"/> </div> <div> Water Jet <input type="checkbox"/><br/> Prod. Eng. Coord. <input type="checkbox"/><br/> Rec/Store/Packaging <input type="checkbox"/><br/> Supplier <input type="checkbox"/> </div> <div> Engineering <input type="checkbox"/><br/> Quality <input type="checkbox"/><br/> Other <input type="checkbox"/> </div> </div> |             |              |              |  |  |
|--|------|------|-----|--|-------------------|--|-------------|--------------|--------------|--|--|
| Root Cause   | Date | Step | Qty | Description of work order update or Non-conformance  | Initial Chief Eng | Action Description   | Sign & Date | Verification | QC Inspector |  |  |
| Doc/Data <input type="checkbox"/>                            |      |      |     |  |                   |  |             |              |              |  |  |
| Equip/Tooling <input type="checkbox"/>                       |      |      |     |  |                   |  |             |              |              |  |  |
| Operator <input type="checkbox"/>                            |      |      |     |  |                   |  |             |              |              |  |  |
| Material <input type="checkbox"/>                            |      |      |     |  |                   |  |             |              |              |  |  |
| Setup <input type="checkbox"/>                               |      |      |     |  |                   |  |             |              |              |  |  |
| Other <input type="checkbox"/>                               |      |      |     |  |                   |  |             |              |              |  |  |
| Process <input type="checkbox"/>                             |      |      |     |  |                   |  |             |              |              |  |  |
| Supplier <input type="checkbox"/>                            |      |      |     |  |                   |  |             |              |              |  |  |
| Training <input type="checkbox"/>                            |      |      |     |  |                   |  |             |              |              |  |  |
| Unapproved <input type="checkbox"/>                          |      |      |     |  |                   |  |             |              |              |  |  |

| FAULT CATEGORY  |  |  |   |  |  |   |  |  |  |  |   |  |
|---|--|--|---|--|--|---|--|--|--|--|---|--|
| <b>Landing Gear</b><br><input type="checkbox"/> Bending<br><input type="checkbox"/> Centre Not Concentric to O/S<br><input type="checkbox"/> Cracks<br><input type="checkbox"/> Crushed/Crimped<br><input type="checkbox"/> Cuffs<br><input type="checkbox"/> Heat Treat<br><input type="checkbox"/> Inspection Strip in Tube<br><input type="checkbox"/> Ripples in Bend<br><input type="checkbox"/> Torque Waves in Extrusion<br><input type="checkbox"/> Turning Sequence<br><input type="checkbox"/> Wave/Twist in Tube |  |  | <b>General</b><br><input type="checkbox"/> Bend<br><input type="checkbox"/> BOM/Route<br><input type="checkbox"/> Broken/Damaged<br><input type="checkbox"/> Burrs<br><input type="checkbox"/> Contamination<br><input type="checkbox"/> Countersink<br><input type="checkbox"/> Cut Too Short<br><input type="checkbox"/> Drill Holes<br><input type="checkbox"/> Drawing<br><input type="checkbox"/> Finish<br><input type="checkbox"/> Folio |  |  | <input type="checkbox"/> Grain<br><input type="checkbox"/> Hardware<br><input type="checkbox"/> Inspection Incomplete<br><input type="checkbox"/> Instructions Incomplete/Unclear<br><input type="checkbox"/> Maintenance<br><input type="checkbox"/> Mislabeled<br><input type="checkbox"/> Misread<br><input type="checkbox"/> Offset<br><input type="checkbox"/> Out of Calibration<br><input type="checkbox"/> Out of Sequence<br><input type="checkbox"/> Outside Dimensions |  |  | <input type="checkbox"/> Ovalized<br><input type="checkbox"/> Over/Under tolerance<br><input type="checkbox"/> Part Incorrect<br><input type="checkbox"/> Part Lost/Missing<br><input type="checkbox"/> Part Moved<br><input type="checkbox"/> Positioned Wrong<br><input type="checkbox"/> Power Loss/Surge |  | <input type="checkbox"/> Pressure/Forced<br><input type="checkbox"/> Temperature/Cure<br><input type="checkbox"/> Weld<br><input type="checkbox"/> Wrong Stock Pulled<br><br><input type="checkbox"/> Other |  |

# Picklist Print

February-21-13 2:41:09 PM

Page 1

Work Order ID: 97577

Parent Item: D3638-1

Parent Item Name: Bushing - Clarify w/customer Rev. A or Rev. B

Start Date: 2/20/13

Required Date: 3/08/13

Start Qty: 20.00

Required Qty: 20.00

Comments: IPP rev A 07.09.11 new issue EC  
IPP Rev:B 08-01-10 ECN 1050 rev.b as per dwg DD

| Component Item ID/<br>Item Name  | Replacement<br>Item ID | Mfg/<br>Purch | Bin<br>Item | Primary<br>Location | Last<br>Location | Route<br>Seq ID | Unit of<br>Measure | Qty on<br>Hand | Qty per Kit | Total<br>Qty | Qty<br>Issued | Date<br>Issued | Status |
|----------------------------------|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|-------------|--------------|---------------|----------------|--------|
| M303R1.000<br>303 Round Bar 1.00 |                        | Purchased     | No          |                     |                  | 100             | f                  | 31.8903        | 0.035       | 0.736842     |               | 10 13/03/09    |        |

| <u>Location</u> | <u>Loc Qty</u> | <u>Loc Code</u> |
|-----------------|----------------|-----------------|
| MAT028          | 31.89031579    |                 |
| 120866          | 1.4            |                 |
| 121070          | 6.63031579     |                 |
| 121282          | 0.9            |                 |
| 121728          | 3.034          |                 |
| 122386          | 14.926         |                 |
| 123294          | 5              |                 |

124771

.74

NCR: Yes / No

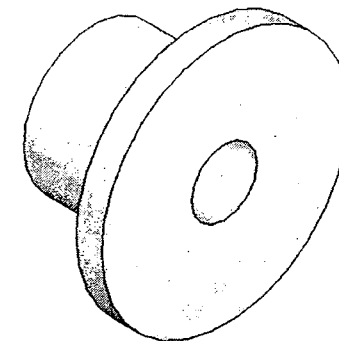
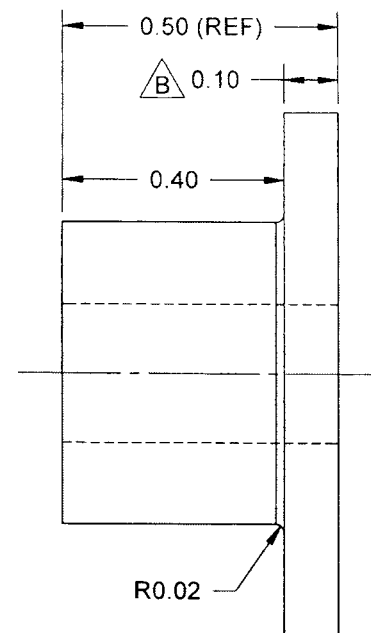
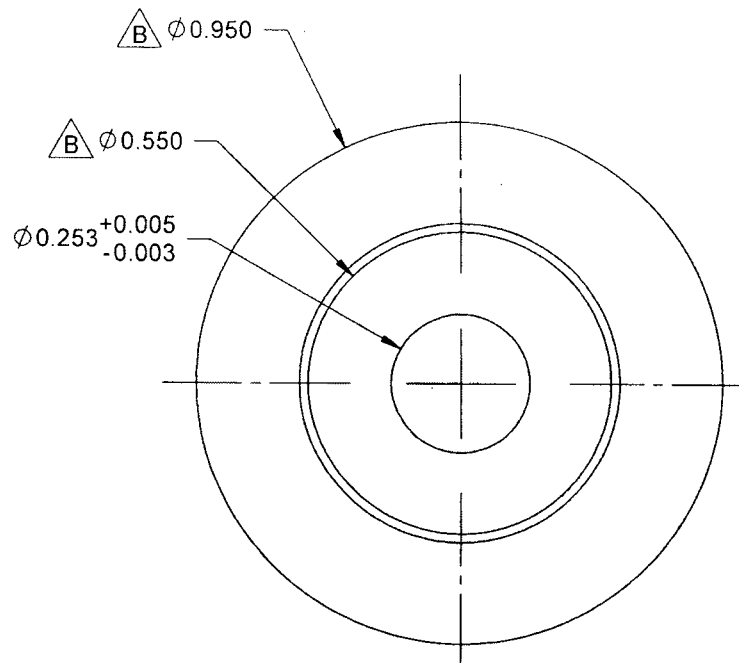
**WORK ORDER NON-CONFORMANCE / UPDATE**

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

|  |  |  |  |  |  |
|--|--|--|--|--|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____ |  |  |  | <b>DISPOSITION</b><br><br><div style="display: flex; justify-content: space-around;"> <div> <input type="checkbox"/> Rework<br/> <input type="checkbox"/> Scrap<br/> <input type="checkbox"/> Use-as-is<br/> <input type="checkbox"/> Work Order Update         </div> <div> <input type="checkbox"/> Skid-tube<br/> <input type="checkbox"/> Machining<br/> <input type="checkbox"/> Thermoforming<br/> <input type="checkbox"/> Large Fab         </div> <div> <input type="checkbox"/> Crosstube<br/> <input type="checkbox"/> Small Fab<br/> <input type="checkbox"/> Finishing<br/> <input type="checkbox"/> Composite         </div> <div> <input type="checkbox"/> Water Jet<br/> <input type="checkbox"/> Prod. Eng. Coord.<br/> <input type="checkbox"/> Rec/Store/Packaging<br/> <input type="checkbox"/> Supplier         </div> <div> <input type="checkbox"/> Engineering<br/> <input type="checkbox"/> Quality<br/> <input type="checkbox"/> Other         </div> </div> |  |
|--|--|--|--|--|--|





SIR  
K  
END  
UNCONF  
SUBJECT  
WILL  
WORK  
NO - 99577 MLC  
13-02-25

**D3638-1 BUSHING**  
**(REPLACES GENEVA P/N G10608-2)**

**RELEASED**  
07.11.14

**NOTES:**

- 1) MATERIAL: AISI 303 ROUND BAR (REF DART SPEC M303R)
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 0.01lbs

|            |   |   |              |
|------------|---|---|--------------|
| B          | INCREASE SHAFT OD FROM 0.375 TO 0.550; ADD FLANGE | LE  | 07.10.16     |
| A          | NEW ISSUE; REPLACES GENEVA G10608-2               | LE  | 07.07.27     |
| REV.       | DESCRIPTION                                       | BY  | DATE         |
| DESIGN     | TS  | <b>DART AEROSPACE USA, INC.</b><br>PORT HADLOCK, WA   |              |
| DRAWN      | LE  |   |              |
| CHECKED    | LE  | DRAWING NO.   | REV. B       |
| MFG. APPR. | LE  | D3638   | SHEET 1 OF 1 |
| APPROVED   | LE  | TITLE   | SCALE        |
| DE APPR.   | LE  | BUSHING   | 3:1          |
| DATE       | 07.10.16  | COPYRIGHT © 2007 BY DART AEROSPACE USA, INC.<br>THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS<br>NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT<br>WRITTEN PERMISSION FROM DART AEROSPACE USA, INC. |              |